

# SYSTEM AND METHOD FOR COUNTING CARS AT NIGHT

## ABSTRACT OF THE DISCLOSURE

A vehicle identification system distinguishes vehicles in reduced visibility conditions based on the characteristic projection patterns associated with vehicle headlights and their reflections. Recognizing that the appearance of reflections of headlight beams in a camera image is highly dependent upon the angle of incidence/reflection relative to the camera, whereas the appearance of the headlights in the camera image is relatively consistent, the vehicle identification system distinguishes vehicles from their reflections based on the tracks of the illumination patterns in a series of images. In a first embodiment, headlights are distinguished from reflections based on a length of the tracks. In a second embodiment, recognition zones are selected as regions in the camera image that are not likely to provide reflections from normally aligned headlight beams. Pattern-matching and motion-correlation techniques are also used to identify the track of each vehicle in prior and subsequent image frames.